| AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT | 1. CONTRACT ID CODE | Page 1 of Pages 15 |
|---|---|---|

| 2. AMENDMENT/~~MODIFICATION~~ NO. | 3. EFFECTIVE DATE | 4. REQUISITION/PURCHASE REQ. NO. | 5. PROJECT NO. (If applicable) |
|---|---|---|---|
| 002 | November 30, 2000 | | |

| 6. ISSUED BY | CODE | LC-3112 | 7. ADMINISTERED BY (If other than Item 6) | CODE |
|---|---|---|---|---|
| Bureau of Reclamation<br>Lower Colorado Region<br>P.O. Box 61470<br>Boulder City NV 89006-1470 | | | | |

| 8. NAME AND ADDRESS OF CONTRACTOR (No., street, county, State, and ZIP code) | (T) | 9A. AMENDMENT OF SOLICITATION NO. |
|---|---|---|
| | T | 01-SQ-30-0050 |
| | | 9B. DATED (SEE ITEM 11) |
| | | November 9, 2000 |
| | | 10A. MODIFICATION OF CONTRACT/ORDER NO. |
| | | 10B. DATED (SEE ITEM 13) |
| CODE FACILITY CODE | | |

## 11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[ **T** ] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers [ ] is extended, [ X] is not extended.

Offerors must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods: (a) By completing Items 8 and 15, and returning 1 copy of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (if required)

## 13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

| | |
|---|---|
| (**T**) | A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT/ORDER NO. IN ITEM 10A. |
| | B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation date, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b). |
| | C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF: |
| | D. OTHER (Specify type of modification and authority) |

E. **IMPORTANT**: Contractor [ ] is not, [ ] is required to sign and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/~~MODIFICATION~~ (Organized by UCF section headings, including solicitation/contract subject matter where feasible)

**Project Title**: Armature Winding, Reconditioned Exciter and Testing Existing Core for Generator at Davis Powerplant, Parker-Davis Project Arizona

**Purpose of Amendment**: The purpose of this amendment is to provide the name and address of each potential offeror attending the site visit on November 28, 2000, provide answers to questions submitted by the potential offerors, provide the Field Test Report for Unit No. 1 and make a minor change to the specifications.

**Receipt of Quotes**: The date for receipt of quotes remains December 15, 2000. The time for receipt of quotes remains 3 p.m., local time. The place for receipt of quotes remains the Bureau of Reclamation, Lower Colorado Regional Office, P.O. Box 61470, Boulder City NV 89006-1470 or for overnight mail Bureau of Reclamation Lower Colorado Regional Office, 400 Railroad Avenue, Boulder City, Nevada 89005.

**Acknowledgment**: See block 11 above regarding how to acknowledge this amendment. The acknowledgment must be received at the place designated for receipt of offers (see block 9 of the "Solicitation/Contract/Order for Commercial Items," Standard Form 1449).

**Offer Modification**: See block 11 above if you have submitted your offer and now desire to modify it or withdraw it.

(Continued on the following page(s)

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

| 15A. NAME AND TITLE OF SIGNER (Type or print) | | 16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print) | |
|---|---|---|---|
| 15B. CONTRACTOR/OFFEROR<br>_____<br>(Signature of person authorized to sign) | 15C. DATE SIGNED | 16B. UNITED STATES OF AMERICA<br>BY_____<br>(Signature of Contracting Officer) | 16C. DATE SIGNED |

Description of the Changes:

1. The names and addresses are hereby provided of each potential offeror attending the site visit on November 28, 2000.

2. The answers are hereby provided to questions submitted by potential offeror's during the site visit.

3. The Field Test Report for Unit No. 1 that was provided to each potential offeror attending the site visit is hereby provided.

4. A change has been made to the specifications. Refer to the listing below for the specific pages which were revised. The Table of Contents has been changed accordingly.

***Instructions***:

| ***Remove*** | ***Replace with Revised*** |
|---|---|
| N/A | List of site visit attendees (1 page) |
| N/A | Questions and Answers (2 pages) |
| N/A | Field Test Report (6 pages) |
| Pages 1 and 2 | Pages 1 and 2 |
| Pages 23 and 24 | Pages 23 and 24 |

SOLICITATION NO. 01-SQ-30-0050

ARMATURE WINDING, RECONDITIONED EXCITER AND TESTING EXISTING CORE FOR GENERATOR AT DAVIS POWERPLANT, PARKER-DAVIS PROJECT, ARIZONA

LIST OF OFFEROR'S ATTENDING THE
NOVEMBER 28, 2000 SITE VISIT

GE Hydro Power
140 Geary St., Suite 800
San Francisco, CA 94108

National Electric Coil
606 Blacksaw
Aztec, NM 87410

Alstom
1750 Chemin Saint-Roch

Alstom Power Inc.
7921 South Park Plaza
Littleton CO 80120

SOLICITATION NO. 01-SQ-30-0050

ARMATURE WINDING, RECONDITIONED EXCITER AND TESTING EXISTING CORE FOR GENERATOR AT DAVIS POWERPLANT, PARKER-DAVIS PROJECT, ARIZONA

SITE VISIT-Questions and Answers
NOVEMBER 28, 2000, 10AM

1. Q - Are spare core samples available ?
A - a used original G. E. punching was made available to all attendees. Unit #1 had core damage prior to the last rewind in 1974. The core in the quadrant with coils 274, 275, and 276 was un-stacked down to approximately the 10 th air passage from the top of the core. Some spare punchings were installed and others cleaned and distributed throughout the quadrant. A core test was performed after the repair. There were no unusual hot spots detected.

2. Q - Why only one unit in the bid with options?
A - Funding is available for only one unit at this time.

3. Q - Are units 1, 4, 3 identical?
A - Yes, all five units were originally installed by G. E. under one contract. All unit went into production in 1951.

4. Q - Are spare wedges and a coil sample available?
A - Wedges and a coil sample were available to all in attendance. Requests for samples from bidders not in attendance will be honored. Units 1, 4, and 5 were rewound by Hannon Electric, the coil segments were from unit #5.

5. Q - Are the exciters all identical and what is the coil pitch of the armature?
A - Yes the exciters are identical, the coil pitch is 1 in 17. For verification call Jerry Grigsbee, Grand Eagle Co., Telephone number 801-973-4100.

6. Q - Are any air flow measurements available?
A - No

7. Q - What units are the Tables C.-1 and C.-2 from, spec page 41 and 42?
A - The unit number(s) can not be determined.

8. Q - Are there any noise or vibration problems?
A - No, Unit #4 , (first option), does have loose filler material between and at the back of the coils.

9. Q - Is there any core or coil movement in any of the units?
A - No core movement to our knowledge, minor coil downward movement in Unit #4.

10. Q - Is there a procedure available for winding erection?
A - No.

11. Q - What is the weight of a complete coil?
A - Approximately 64 lbs. (Removed coil from unit 5 with parts of the end winding cut off)

12. Q - Are additional drawings available?
A - No drawings are available for the exciter or generator rotor.

13. Q - There are 2 slot drawings in the solicitation package., one G. E. and the other Thomson Electric?
A - Yes, The drawings are not to be considered as defining the design, but are merely illustrative of the Technical Requirements. If there is a difference between the drawings and Technical Requirements, the later shall govern.

Other statement:

Drawing D2989, in the spec shows reversible windings - We do not want reversible winds at the ring bus.

HANNON ELECTRIC CO.
CANTON, OHIO 44707

# FIELD TEST REPORT
# UNITED STATES BUREAU OF RECLAMATION
# DAVIS POWER PLANT
# BULLHEAD CITY, ARIZONA

Solicitation No. DS-6997
General Electric Vertical Waterwheel Generator
48,000 KVA, 94.7 RPM, 13,800 Volts, 60 HZ,
1.0 P.F., 3 phase, Serial 6638024, Form W,
Armature Amps 2008, Type AT176

Exciter - 12KW, 94.7 RPM, 250 VDC, 48 amp,
Compound, Type EV, Serial 2358101

| INDEX | PAGE |
|---|---|

| Armature Winding | Resistance in Ohms @23.9$^{O}$C | Resistance in Ohms @75$^{O}$C | Rated Current | $I^2R$ Losses | Total Armature $I^2R$ Losses |
|---|---|---|---|---|---|
| T1 - T4 | .01121 | .01343 | 2008 | 54.15KW | |
| T2 - T5 | .01121 | .01343 | 2008 | 54.15KW | 162.5KW |
| T3 - T6 | .01121 | .01343 | 2008 | 54.15KW | |

48,000 KVA HEAT RUN (TABLE E.1)

Monitored Values As Read

| multiplier | 1 | 15 | 1 | 500 | 500 | 500 | 120 | 120 | 120 | $\frac{4x120x500}{1000}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| value measured | RPM | $I_f$ | $V_f$ | $I_a$(A) | $I_a$(B) | $I_a$(C) | (A-B) $V_{1-1}$ | (B-C) $V_{1-1}$ | (A-C) $V_{1-1}$ | KW |
| 6:00pm | 94.7 | 66.8 | 165 | 4.02 | 4.04 | 4.02 | 114.2 | 114.2 | 114.7 | 201 |
| 6:30pm | 94.7 | 65.7 | 162 | 4.04 | 4.06 | 4.04 | 113.5 | 113.2 | 113.9 | 201 |
| 7:00pm | 94.7 | 65.7 | 162 | 4.04 | 4.07 | 4.06 | 113.5 | 113.4 | 113.8 | 201 |

(TABLE E.2)
Value as Adjusted

| value measured | RPM | $I_f$ | $V_f$ | $I_a$(A) | $I_a$(B) | $I_a$(C) | (A-B) $V_{1-1}$ | (B-C) $V_{1-1}$ | (A-C) $V_{1-1}$ | KW | P.F.* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 6:00pm | 94.7 | 1002 | 165 | 2010 | 2020 | 2010 | 13704 | 13704 | 13764 | 48240 | 1.008 |
| 6:30pm | 94.7 | 985.5 | 162 | 2020 | 2030 | 2020 | 13620 | 13584 | 13668 | 48240 | 1.008 |
| 7:00pm | 94.7 | 985.5 | 162 | 2020 | 2035 | 2030 | 13620 | 13608 | 13656 | 48240 | 1.008 |

Field current at 45,000 KVA, 13,800 VOLTS and 1.0 P.F.
was 979.5 AMPS at 163 VDC.

* Note: Power factor values greater than one were caused by erroneous wattmeter readings. The wattmeter was calibrated later and found to deviate from reference approximately plus 1 per cent.

55,200 KVA HEAT RUN (TABLE F.1)

Monitored Values As Read

| multiplier | 1 | 15 | 1 | 500 | 500 | 500 | 120 | 120 | 120 | $\frac{4x120x500}{1000}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| value measured | RPM | $I_f$ | $V_f$ | $I_a$(A) | $I_a$(B) | $I_a$(C) | (A-B) $V_{1-1}$ | (B-C) $V_{1-1}$ | (A-C) $V_{1-1}$ | KW |
| 9:00am | 94.7 | 69.6 | 175 | 4.58 | 4.58 | 4.57 | 115.0 | 115.0 | 115.5 | 230 |
| 9:30am | 94.7 | 70.1 | 176 | 4.58 | 4.58 | 4.57 | 115.1 | 115.1 | 115.5 | 230 |
| 10:00am | 94.7 | 70.0 | 176 | 4.58 | 4.58 | 4.57 | 115.1 | 115.0 | 115.6 | 230 |

(TABLE F.2)

Value as Adjusted

| value measured | RPM | $I_f$ | $V_f$ | $I_a$(A) | $I_a$(B) | $I_a$(C) | (A-B) $V_{1-1}$ | (B-C) $V_{1-1}$ | (A-C) $V_{1-1}$ | KW | P.F.* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9:00am | 94.7 | 1044 | 175 | 2290 | 2290 | 2285 | 13800 | 13800 | 13860 | 55200 | 1.008 |
| 9:30am | 94.7 | 1052 | 176 | 2290 | 2290 | 2285 | 13812 | 13812 | 13860 | 55200 | 1.008 |
| 10:00am | 94.7 | 1050 | 176 | 2290 | 2290 | 2285 | 13812 | 13800 | 13872 | 55200 | 1.008 |

* Note: Power factor values greater than one were caused by erroneous wattmeter readings. The wattmeter was calibrated later and found to deviate from reference approximately plus 1 per cent.

TABLE H

| | 48,000 KVA HEAT RUN temperature $^{O}$c | | | 55,200 KVA HEAT RUN temperature $^{O}$c | | |
|---|---|---|---|---|---|---|
| | HOTTEST | COOLEST | AVERAGE | HOTTEST | COOLEST | AVERAGE |
| ARMATURE WINDING | 70.9 | 55.3 | 60.7 | 81.6 | 62.8 | 69.6 |
| ARMATURE CORE | 47 | 44 | 46 | 51 | 47 | 49.4 |
| FIELD WINDING (calculated) | ------ | ------ | 43.9 | ------ | ------ | 49.4 |
| AMBIENT TEMPT. (outgoing air from coolers) | 19 | 14 | 17.6 | 20 | 14 | 18.1 |
| | | | | | | |

| | 48,000 KVA | 55,200 KVA |
|---|---|---|
| ARMATURE TEMPT. RISE | 70.9 - 17.6 = 53.3$^{O}$c | 81.6 - 18.1 = 63.5$^{O}$c |
| FIELD TEMPT. RISE | 43.9 - 17.6 = 26.3$^{O}$c | 49.4 - 18.1 = 31.3$^{O}$c |
| CORE TEMPT. RISE | 46 - 17.6 = 28.4$^{O}$c | 49.4 - 18.1 = 31.3$^{O}$c |

55,200 KVA HEAT RUN (TABLE F.1)

Monitored Values As Read

| multiplier | 1 | 15 | 1 | 500 | 500 | 500 | 120 | 120 | 120 | $\frac{4x120x500}{1000}$ |
|---|---|---|---|---|---|---|---|---|---|---|
| value measured | RPM | $I_f$ | $V_f$ | $I_a$(A) | $I_a$(B) | $I_a$(C) | (A-B) $V_{1-1}$ | (B-C) $V_{1-1}$ | (A-C) $V_{1-1}$ | KW |
| 9:00am | 94.7 | 69.6 | 175 | 4.58 | 4.58 | 4.57 | 115.0 | 115.0 | 115.5 | 230 |
| 9:30am | 94.7 | 70.1 | 176 | 4.58 | 4.58 | 4.57 | 115.1 | 115.1 | 115.5 | 230 |
| 10:00am | 94.7 | 70.0 | 176 | 4.58 | 4.58 | 4.57 | 115.1 | 115.0 | 115.6 | 230 |

(TABLE F.2)

Value as Adjusted

| value measured | RPM | $I_f$ | $V_f$ | $I_a$(A) | $I_a$(B) | $I_a$(C) | (A-B) $V_{1-1}$ | (B-C) $V_{1-1}$ | (A-C) $V_{1-1}$ | KW | P.F.* |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 9:00am | 94.7 | 1044 | 175 | 2290 | 2290 | 2285 | 13800 | 13800 | 13860 | 55200 | 1.008 |
| 9:30am | 94.7 | 1052 | 176 | 2290 | 2290 | 2285 | 13812 | 13812 | 13860 | 55200 | 1.008 |
| 10:00am | 94.7 | 1050 | 176 | 2290 | 2290 | 2285 | 13812 | 13800 | 13872 | 55200 | 1.008 |

* Note: Power factor values greater than one were caused by erroneous wattmeter readings. The wattmeter was calibrated later and found to deviate from reference approximately plus 1 per cent.

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November 1, 2003. If exclusive use of the generator stator with the generator rotor removed is not available to the Contractor on November 1, 2003 the required completion date for the Base Schedule will be extended by the number of calendar days after November 1, 2003 that exclusive use of the generator stator with the generator rotor removed is available. This time extension is the sole remedy for the delay in the use of the generator stator described herein. The Contractor shall not be entitled to additional payment resulting from the dely in the availability of the generator stator described above.

(a) The contractor shall deliver to Davis Dam the required armature windings no later than November 1, 2003.

(b) The contractor shall begin performance on the armature windings, reconditioning exciter and testing existing core, within 15 calendar days after receipt of the notice of award and complete all work, including installation and testing in accordance with part 6.03(a) and (b), and final cleanup, no later than February 1, 2004.

(c) The tests under part 6.03 (c), (e) and (f), Field Tests, shall be performed at a time selected by Reclamation, but not to exceed 18 months after completion of installation of the armature winding.

(d) The Table below is to be completed by the offeror and submitted with the initial offer. Offerors that propose a Delivery/Completion time in excess of the Required Delivery/Completion time will not be considered for award. As timely delivery and completion are considered highly important by the Government and are included as an evaluation factor for award, offerors are encouraged to propose a shorter Delivery/ Completion Time than required by the Government. The Government reserves the right to award under either the Required Delivery/Completion schedule or the Proposed Delivery/Completion schedule, when an offeror proposes an earlier Delivery/Completion schedule than required below.

Delivery/Completion Schedule - Option Schedule 2- Unit No. 3

| Line Item No. | Description | Required Delivery/ Completion Time* | Proposed Delivery/ Completion Time* |
|---|---|---|---|
| 28 | Furnishing and factory testing new Armature Winding | No later than November 1, 2003 | |
| 29, 30, 31, 33A, 33B, 34, 35A, 35B, 35C, 37 | Complete all work on armature windings, reconditioning exciter and testing existing core, including installation and testing in accordance with part 6.03(a) and (b), final cleanup and furnish spare parts | No later than February 1, 2004 | |

% (C) ACCELERATION OR CHANGE OF ORDER IN WHICH WORK IS TO BE
% PERFORMED

Reclamation, at its sole option, reserves the right to direct the Contractor to expedite the installation and testing work. The additional cost to the Contractor for expediting this work will be negotiated either prior to or directly after the direction for expediting the work is given.

% A unit failure may change the unit order in which the Contractor is required to perform work
% on Units 1, 3 and 4. Reclamation, at its sole option, reserves the right to select the unit
% order in which work is to be performed under the Base Schedule, Option Schedule 1 and
% Option Schedule 2. No additional cost will be paid to the Contractor for this change.

(D) 52.211-11 LIQUIDATED DAMAGES--SUPPLIES, SERVICES, OR RESEARCH AND DEVELOPMENT (APR 1984)

(a) If the Contractor fails to deliver the supplies or perform the services within the time specified in this contract, or any extension, the Contractor shall, in place of actual damages, pay to the Government as fixed, agreed, and liquidated damages, for each calendar day of delay the sum of $6,500.

Provided that the maximum total liability for liquidated damages for the delay to the base schedule and optional schedule shall not exceed $200,000.

(b) Alternatively, if delivery or performance is so delayed, the Government may terminate this contract in whole or in part under the Termination for Default paragraph in this contract and in that event, the Contractor shall be liable for fixed, agreed, and liquidated damages accruing until the time the Government may reasonably obtain delivery or performance of similar supplies or services. The liquidated damages shall be in addition to excess costs under the Termination clause.

(c) The Contractor shall not be charged with liquidated damages when the delay in delivery or performance arises out of causes beyond the control and without the fault or negligence of the Contractor as defined in the Termination for Default paragraph in this contract.